

CASE REPORT

INTRAMUSCULAR HYDATID CYST OF PARASPINAL MUSCLE: A RARE LOCATION

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INTRODUCTION: Hydatid disease has a worldwide distribution and causes health problems in endemic countries. The parasite has a "dog-sheep" cycle with man as an intermediate accidental host. When humans ingest the eggs of the tapeworm, the embryos that emerge penetrate the intestinal mucosa and are transported via the circulation to various organs. Most commonly they reach the liver, lungs and the other organs are rarely affected. Primary hydatid cyst of skeletal muscle is rare, occurring in 1-3% of all cases.^(1,2) The prevalence of intramuscular hydatid disease is reported to be less than 0.5%, because muscle is an unfavourable site for infestation because of high levels of lactic acid in muscle.⁽³⁾ The diagnosis is difficult because of the unusual location, low prevalence and complicated cysts may mimic solid or complex lesions.⁽⁴⁾

The differential diagnosis in these cases must include malignant soft-tissue tumors such as myxoid liposarcoma, soft tissue abscesses and chronic hematoma.⁽⁵⁾ Hydatid disease of humans caused by *Echinococcus granulosus* has been recognized as a major public health problem. It is found in all sheep-raising countries of the world. In India, the highest prevalence is reported from Andhra Pradesh and Tamil Nadu.⁽⁶⁾

Injudicious approach in the management of these rare presentations may be the root cause of severe anaphylactic shock and systemic dissemination. We report an unusual case of primary hydatidosis of the paraspinal muscles.

CASE REPORT: A 38-year-old female presented to surgical department with a 6 month history of painful, slow growing, enlarging swelling in her right side of back. She had no history of fever or prior trauma. On physical examination, there was a soft, non-tender deep-seated mass measuring approximately 6 cm x 4 cm in size in the right loin at L3-L4 level. There were no symptoms or signs of inflammation. Routine laboratory tests were normal, except peripheral smear was showing eosinophilia. Ultrasonography demonstrated a well-defined multi-loculated intramuscular cystic lesion measuring 6 cm x 5 cm x 3 cm. [Fig. 1] The differential diagnosis of soft-tissue tumor or hydatid cyst was offered by the radiologist. Abdominal ultrasonography did not reveal any organ involvement. CECT scan demonstrated a thick peripherally enhancing hypodense lesion in Rt paraspinal muscle with central necrosis (cold abscess or Hydatid cyst). [Fig. 2] During surgery, complete excision of cyst was done with special attention to remove intact hydatid cysts without any breakage and spillover of contents. The diagnosis was confirmed by examination of the excised cyst.

Gross specimen examination: Cut open revealed intramuscular multi-loculated cystic lesion containing grey-white glistening grape-like structures of varying sizes. [Fig. 3] Cut open of grape-

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like membranous structures yielded a clear fluid with multiple daughter cysts, which was handled very carefully and collected in glass tube and centrifuged to observe under microscopy. Unstained smears of centrifuged material revealed hooklets of *Echinococcus granulosus*.

Histopathological examination revealed a laminated membrane, which was refractile, structureless, and acellular with numerous scoleces attached to the germinative layer. [Fig. 4] A focus of dystrophic calcification of the cyst was seen, which suggests long duration of the disease process. Post-operative period was uneventful, and the patient was discharged on albendazole 10 mg/kg per day for 4 weeks treatment.

DISCUSSION: Human echinococcosis is a world-wide cyclozoonotic parasitic infestation caused by the larval stage of the tapeworm namely *Echinococcus*. The two most important forms, which are of medical and public health relevance in humans, are most common cystic echinococcosis caused by *Echinococcus granulosus* and rare alveolar echinococcosis, which is a severe form caused by *Echinococcus multilocularis*.

Humans are the accidental intermediate hosts infected through contact with a definitive host, by handling the soil that contains eggs or ingestion of the contaminated water and vegetables.⁽⁷⁾

The parasite may affect any organ; however, muscle is supposed to be an unfavourable site for infestation because of its high lactic acid concentration.⁽⁸⁾ Intramuscular hydatid cysts grow gradually and may mimic a soft tissue tumor⁽⁹⁾ thus, the diagnosis of soft-tissue hydatid cysts needs a high index of suspicion. Humans are known to be accidental intermediate hosts for *Echinococcus* organisms. The adult form of the parasite is seen only in dogs. The life cycle of the larva in a human ends with the bacterial infection, shrinkage of the cyst and eventual calcification.

Ultrasonography is the major non-invasive screening investigation to discover the primary site of the disease.⁽¹⁰⁾ The CT appearance of the hydatid cyst is not diagnostic as it may mimic malignant and benign conditions such as congenital cyst, pseudocyst or hematomas. However, the presence of daughter cysts, germinal epithelium detachment and calcification may confirm the diagnosis. Similarly, an MRI can reveal a cystic mass containing daughter cysts, with rim sign and "Water Lilly sign."⁽¹¹⁾ The best way to establish the diagnosis is the direct visualization of parasitic elements in the surgically resected pathological specimen.

Preoperative medical treatment may sterilize the cyst cavity and might decrease the intraoperative complication of spillage and consequential anaphylaxis. Intraoperative irrigation by 0.5% cetrimide, 15% hypertonic saline or 0.5% silver nitrate solution prior to cyst opening may kill the daughter cysts and further reduces the risk of dissemination and anaphylactic reaction. Inadvertent cyst rupture releases viable scolices, which may enter the circulation, disseminate to distant organs, and reproduce asexually to form additional cysts. The likelihood of recurrent infestation is increased after rupture of the parent cyst. In addition, leakage of cyst contents may cause an anaphylactic shock. Thus, excision of an intact cyst is curative.

CONCLUSION: Hydatid disease can affect any organ in the body, the infestation of muscle sometimes mimics a soft tissue tumor, thus the diagnosis of soft-tissue hydatid cysts needs a

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high index of suspicion. The purpose of the present report is to alert about to this rare infestation so that an open biopsy will be avoided. Percutaneous needle biopsy is also not recommended because of the possibility of introducing scolices into the needle tract. The recommended treatment of Echinococcus is complete excision of the cyst lining and thorough irrigation of the cyst cavity with scolecidal agents to decrease the risk of recurrence.

REFERENCES:

1. Sarah, J. M., W. J Christopher, et al. (2007). "Parasitic diseases of the genitourinary system." In: A. J. Wein, L. R. Kavoussi, A. C. Novick, A. W. Partin, and C. A. Peters, eds. Campbell-Walsh Urology, 9th ed. Elsevier-Saunders. Philadelphia, Pennsylvania: 458-459.
2. Kouskos E, Chatziantoniou J, Chrissafis I, Anitsakis C, Zamtrakis S. The uncommon locations of hydatid cysts. Singapore Med J 2007; 48(4): 119-21.
3. Martin J, Marco V, Zidan A, Marco C. Hydatid disease of the soft tissues of the lower limb: findings in three cases. Skeletal Radiol 1993; 22: 511-4.
4. Von Sinner W, te Strake L, Clark D, Sharif H. MR imaging in hydatid disease. Am J Roentgenol 1991; 157: 741-5.
5. Said M, Babba H, Golli M, Ganouni A. Can We Really Have Coexistence of Hydatid Cyst and Tapeworm in Humans? Am J Roentgenol 2001; 176: 252-3.
6. Reddy CR, Narasiah IL, Parvathi G, Rao MS. Epidemiology of hydatid disease in Kurnool. Indian J Med Res 1968; 56: 1205-20.
7. B. Vijaya Nirmala, T. Sundari Devi, "Common Lesion at An Uncommon Site: An Isolated Renal Hydatid Cyst". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 6, February 9, 2015; Page: 778-782.
8. Duncan GJ, Tooke SM. Echinococcus infestation of the biceps brachii. Clin Orthop 1990; 261: 247-50.[PUBMED]
9. Amr SS, Amr ZS, Jitawi S, Annab H. Hydatidosis in Jordan: An epidemiological study of 306 cases. Ann Trop Med Parasitol 1994; 88: 623-7.
10. Niron EA, Ozer H. Ultrasound appearances of liver hydatid disease. Br J Radiol 1981; 54: 335-8.
11. Comert RB, Aydingoz U, Ucaner A, Arikan M. Waterlily sign on MR imaging of primary intramuscular hydatidosis of sartorius muscle. Skeletal Radiol 2003; 32: 420-3. [PUBMED]



Fig. 1: well-defined multi-loculated intramuscular cystic lesion measuring 6 cm x 5 cm x 3 cm

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Fig. 2: Thick peripherally enhancing hypodense lesion in Rt paraspinal muscle with central necrosis (? cold abscess or Hydatid cyst)



Fig. 3: Grey-white glistening grape-like structures of varying sizes

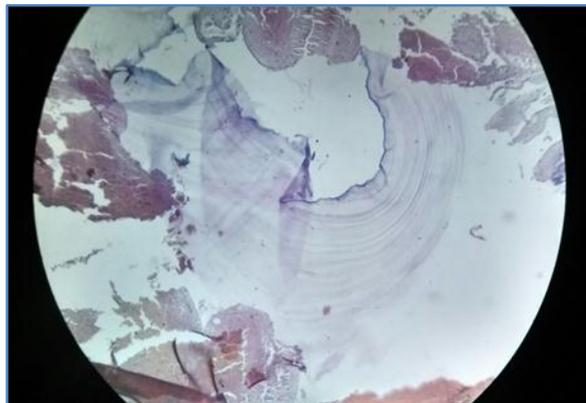


Fig. 4: Refractile, structureless, chitinous, and acellular laminated membrane with foci of dystrophic calcification (H and E, ×40)

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